



**2020**  
ORC Club  
Certificate

**Rating Office**  
Hellenic Sailing Federation  
Offshore Committee  
Επιτροπή  
Ανοικτής Θαλάσσης  
Ελληνικής  
Ιστιοπλοϊκής Ομοσπονδίας



**Certificate**  
Number **00125**  
Issued On **03/09/2020**  
ORC Ref **03420000POV**  
VPP Ver. **2020 1.02**  
Valid until **28/02/2021**

**Crew Weight**

Default	858kg
Maximum	800kg
Minimum*	600kg

*\*when applied by the NoR and SI*  
Non Manual Pwr **No**

**Special Scoring**

ToD	ToT
Non Spin GPH <b>652.5</b>	<b>0.9195</b>
Non Spin OSN <b>633.8</b>	<b>0.9467</b>

**Sails Limitations**

Headsails **6** Spinnakers **4**

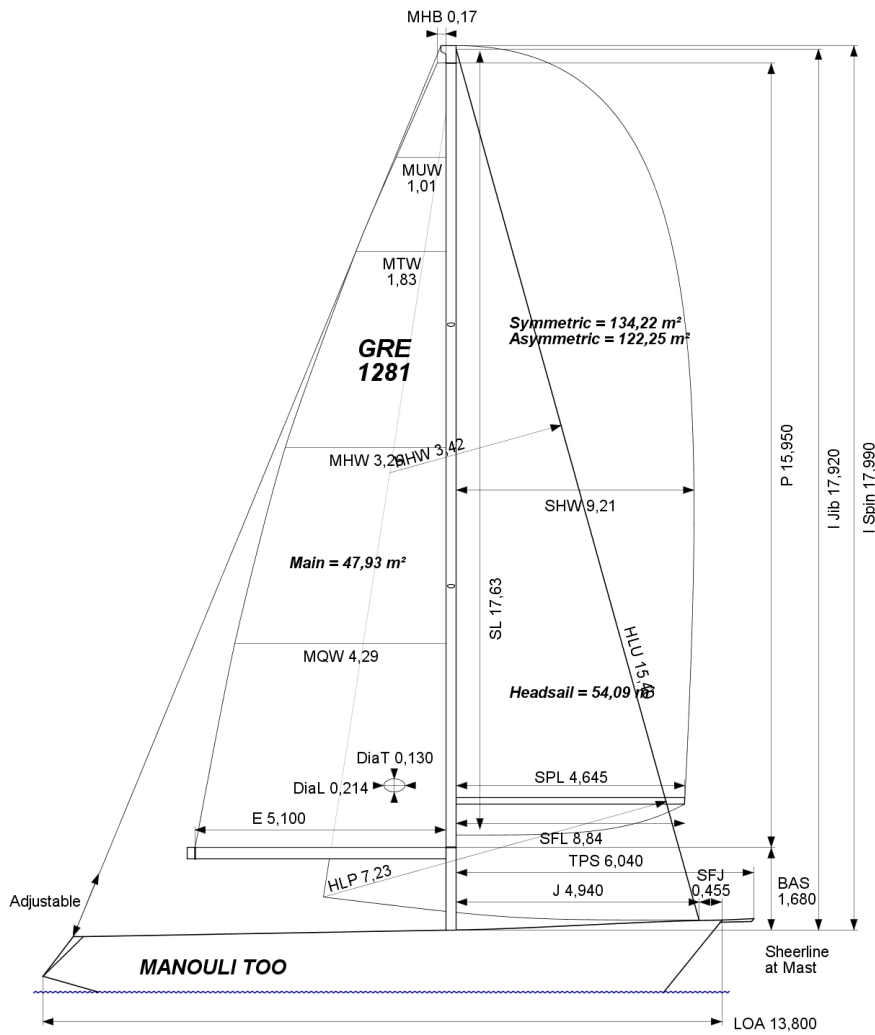
**Asymmetric on centerline**

**Spinnaker configuration**  
Symmetric: **Yes** **134.22**  
Asymmetric: **Yes** **122.25**  
Flying H/S: **No**  
Spin. Pole: **Yes**

**Class Division Length**  
CDL = **9.829**

**Stability (Estimated)**  
Limit Positive Stab.: **108.2°**  
Stability Index: **109.9**

**Owner**



<b>BOAT</b> Name <b>MANOULI TOO</b> Sail Nr <b>GRE-1281</b>		<b>GPH</b> <b>618.8</b>	<b>HULL</b> Data File <b>GR1281</b> LOA <b>13.800m</b> Offset File <b>SO451SK.off</b> MB <b>4.486m</b> Displacement <b>10,002kg</b> Draft <b>1.533m</b>					
<b>CLASS</b> Class <b>SUN ODYSSEY 45.1</b> Designer Builder <b>JEANNEAU</b> Series <b>09/1994</b> Age Date <b>01/1995</b> Age Allowance <b>0.487%</b>			IMS Division <b>Cruiser/Racer</b> Dynamic All. <b>0.272%</b> Plan Review Construction <b>Solid</b> Fiber Rigging <b>No</b> Aramid Core <b>No</b> Crew Arm Ex Carbon Rudder <b>No</b> Light Stanchions <b>No</b>			IMSL <b>11.736m</b> VCGD <b>0.080m</b> Sink <b>28.35kg/mm</b> RL <b>7.921m</b> VCGM <b>0.169m</b> WS <b>37.50m²</b> LSM0 <b>11.672m</b> Displacement/Length ratio <b>6.2900</b>		
<b>COMMENTS</b>			Water Ballast <b>0</b> Trim Tab <b>No</b> BLR Index <b>0.0000</b>			<b>CENTERBOARD</b>  <b>N/A</b>		
<b>PROPELLER</b> Installation <b>Shaft exposed</b> PRD <b>0.457</b> Type <b>Feathering 3 blades</b> PBW <b>0.150</b> PIPA <b>0.0104</b>								
<b>SCORING OPTIONS</b>								
	<b>COASTAL / LONG DISTANCE</b>			<b>WINDWARD / LEEWARD</b>				
Time on Distance	<b>601.3</b>			<b>681.9</b>				
Time on Time	<b>0.9979</b>			<b>0.9898</b>				
Triple Number	Low	Medium	High	Low	Medium	High		
Time on Distance	<b>724.2</b>	<b>544.1</b>	<b>479.5</b>	<b>949.1</b>	<b>688.2</b>	<b>590.1</b>		
Time on Time	<b>0.9321</b>	<b>1.2405</b>	<b>1.4076</b>	<b>0.7112</b>	<b>0.9808</b>	<b>1.1438</b>		

<b>BOAT</b>	
Name <b>MANOULI TOO</b>	Sail Nr <b>GRE-1281</b>
File <b>GR1281</b>	Data in <b>meters/kilograms</b>

<b>RIG</b>	
Forestay Tension <b>Aft</b>	Spreaders <b>2</b>
Inner Stay <b>None Fitted</b>	Runners/Checkstays <b>0</b>
Carbon Mast <b>No</b>	Jib Furler <b>No</b>
Fiber Rigging <b>No</b>	Main Furler <b>No</b>
Non-Circular Rigging <b>No</b>	
Articulated Bowsprit <b>No</b>	
P <b>15.950</b>	E <b>5.100</b> MDT1 <b>0.130</b> MW <b>0.214</b>
IG <b>17.920</b>	J <b>4.940</b> MDL1 <b>0.214</b> GO <b>0.280</b>
ISP <b>17.990</b>	SFJ <b>0.455</b> MDT2 <b>0.130</b> BD <b>0.225</b>
BAS <b>1.680</b>	SPL <b>4.645</b> MDL2 <b>0.214</b> MWT <b>257.00</b>
FSD <b>-3.000</b>	TPS <b>6.040</b> TL <b>0.000</b> MCG <b>7.432</b>

<b>INCLINING TEST AND FREEBOARDS</b>			
Inclining Test <b>Club Estimated VCG</b>			
Flotation date <b>18/05/2009</b>		SG	
FFM <b>1.410</b>	FF <b>1.446</b>	SFFP <b>0.980</b>	
FAM <b>1.125</b>	FA <b>1.109</b>	SAFP <b>12.980</b>	
LCF from stem on CL / on sheer		<b>7.545 / 7.852</b>	
Maximum beam station from stem		<b>8.280</b>	
RM Measured		<b>270.9kg-m</b>	
RM Default		<b>263.1kg-m</b>	
Limit of positive stability / Stab.Index		<b>108.2° / 109.9</b>	
Freeboard at mast at 5.395		<b>1.262</b>	



**ORC**  
Offshore Racing Congress  
World leader in rating technology


**2020**  
Measurements  
Datasheet

<b>MIZZEN RIG AND SAILS</b>	
N/A	

<b>PROPELLER</b>			
Installation <b>Shaft exposed</b>	PRD <b>0.457</b>		
Type <b>Feathering 3 blades</b>	PBW <b>0.150</b>		
Twin Screw <b>No</b>	PIPA <b>0.0104</b>		
PSA <b>18.000</b>	PHL <b>0.070</b>	ST3 <b>0.160</b>	ESL <b>1.145</b>
PSD <b>0.040</b>	ST1 <b>0.052</b>	ST4 <b>0.062</b>	
PHD <b>0.107</b>	ST2 <b>0.160</b>	ST5 <b>0.246</b>	

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<b>COMMENTS</b>	

<b>MOVABLE BALLAST</b>	
N/A	

<b>CENTERBOARD</b>	
N/A	

<b>SAILS INVENTORY</b>																
<b>MAINSAIL (2)</b>																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
1	0.17	1.01	1.83	3.26	4.29	47.93		09/08/2019	QUANTUM	Technora						
M1	0.17	0.98	1.78	3.22	4.30	47.61		14/03/2015	Kafetzidakis	Dacron						
<b>HEADSAILS (2)</b>																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovr/tp	Area	Btn	Flying	Measurer	Meas.Date	Manufacture	Material	Comment
3	0.04	0.84	1.65	3.42	5.30	7.23	15.40	146%	54.09		No		21/03/2009		Dacron	Heavy
4	0.08	0.71	1.40	2.87	4.51	6.35	17.53	129%	52.82		No		04/03/2015	QUANTUM	Kevlar	
<b>SYMMETRIC SPINNAKERS (1)</b>																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
SP1	17.63	17.63	17.63	9.21	8.84	134.23		14/03/2015		Unknown						
<b>ASYMMETRIC SPINNAKERS (1)</b>																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				
1	18.60	15.99	17.30	8.25	9.41	122.25	asym		11/03/2014	QUANTUM	Nylon					

<b>MEASUREMENT INVENTORY</b>				
Measurer <b>GRE40</b>				
Date <b>18/05/2009</b>				
Comment				
<b>Internal Ballast total = 0.0</b>				
Id	Item	Weight	Distance	VCG Description
a1	Anchor	42.0	40.00	
a1	Anchor	20.0	0.80	DELTA
e2	Chain	43.0	40.00	
e1	Chain	420.0	0.80	80m 10mm Chain
t1	Toots	20.0	5.80	
Id	Item	Maker	Model	
e1	Engine	Yanmar	64 HP	
Id	Item	Weight	Description	

<b>MEASUREMENT INVENTORY</b>									
Id	Item	Tank	Use	Tank Type	Capcty	Dist.	VCG	Condtn	Description
L1	Tank	Fuel		Inox	200.0	10.00		30.0	
w2	Tank	Water		Inox	300.0	3.20			Empty
w1	Tank	Water		INOX	300.0	3.20			Empty
Id	Item	Weight	Distance	VCG Description					
b3	Battery	20.0	9.20						
b2	Battery	20.0	9.70						
b1	Battery	20.0	9.70						

# 2020

## ORC Club Certificate Appendix

<b>BOAT</b>	
Name	<b>MANOULI TOO</b>
Sail Nr	<b>GRE-1281</b>
Certificate Number	<b>00125</b>
Issued On	<b>03/09/2020</b>

<b>TIME ALLOWANCES</b>							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1132.6</b>	<b>930.0</b>	<b>818.1</b>	<b>750.3</b>	<b>723.2</b>	<b>712.3</b>	<b>715.5</b>
52°	<b>715.1</b>	<b>593.7</b>	<b>524.8</b>	<b>488.7</b>	<b>473.8</b>	<b>467.8</b>	<b>465.9</b>
60°	<b>655.6</b>	<b>552.1</b>	<b>494.6</b>	<b>467.6</b>	<b>454.6</b>	<b>448.9</b>	<b>445.7</b>
75°	<b>614.5</b>	<b>521.3</b>	<b>474.1</b>	<b>452.4</b>	<b>438.9</b>	<b>428.7</b>	<b>418.2</b>
90°	<b>618.4</b>	<b>520.6</b>	<b>469.1</b>	<b>444.8</b>	<b>432.9</b>	<b>419.7</b>	<b>397.2</b>
110°	<b>627.3</b>	<b>513.2</b>	<b>459.3</b>	<b>434.6</b>	<b>415.1</b>	<b>397.6</b>	<b>376.2</b>
120°	<b>644.3</b>	<b>525.4</b>	<b>464.4</b>	<b>437.1</b>	<b>416.1</b>	<b>396.2</b>	<b>363.7</b>
135°	<b>710.5</b>	<b>573.0</b>	<b>492.1</b>	<b>452.4</b>	<b>429.9</b>	<b>409.2</b>	<b>371.0</b>
150°	<b>839.4</b>	<b>662.4</b>	<b>559.1</b>	<b>492.1</b>	<b>454.5</b>	<b>432.9</b>	<b>394.6</b>
Run VMG	<b>969.2</b>	<b>764.9</b>	<b>645.6</b>	<b>565.1</b>	<b>512.0</b>	<b>470.6</b>	<b>425.6</b>
<b>Selected Courses</b>							
Windward / Leeward	<b>1050.9</b>	<b>847.4</b>	<b>731.9</b>	<b>657.7</b>	<b>617.6</b>	<b>591.4</b>	<b>570.5</b>
Circular Random	<b>864.8</b>	<b>693.0</b>	<b>599.5</b>	<b>544.6</b>	<b>510.9</b>	<b>489.6</b>	<b>465.6</b>
Coastal / Long Distance	<b>1042.7</b>	<b>791.0</b>	<b>650.9</b>	<b>563.8</b>	<b>519.5</b>	<b>486.4</b>	<b>435.4</b>
Non Spinnaker	<b>925.3</b>	<b>735.8</b>	<b>631.4</b>	<b>569.2</b>	<b>530.6</b>	<b>505.9</b>	<b>477.6</b>

<b>Velocity Prediction in Knots for True Wind Speeds</b>							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	<b>46.5°</b>	<b>45.4°</b>	<b>45.4°</b>	<b>44.6°</b>	<b>44.3°</b>	<b>43.9°</b>	<b>44.6°</b>
Beat VMG	<b>3.18</b>	<b>3.87</b>	<b>4.40</b>	<b>4.80</b>	<b>4.98</b>	<b>5.05</b>	<b>5.03</b>
52°	<b>5.03</b>	<b>6.06</b>	<b>6.86</b>	<b>7.37</b>	<b>7.60</b>	<b>7.70</b>	<b>7.73</b>
60°	<b>5.49</b>	<b>6.52</b>	<b>7.28</b>	<b>7.70</b>	<b>7.92</b>	<b>8.02</b>	<b>8.08</b>
75°	<b>5.86</b>	<b>6.91</b>	<b>7.59</b>	<b>7.96</b>	<b>8.20</b>	<b>8.40</b>	<b>8.61</b>
90°	<b>5.82</b>	<b>6.91</b>	<b>7.67</b>	<b>8.09</b>	<b>8.32</b>	<b>8.58</b>	<b>9.06</b>
110°	<b>5.74</b>	<b>7.01</b>	<b>7.84</b>	<b>8.28</b>	<b>8.67</b>	<b>9.05</b>	<b>9.57</b>
120°	<b>5.59</b>	<b>6.85</b>	<b>7.75</b>	<b>8.24</b>	<b>8.65</b>	<b>9.09</b>	<b>9.90</b>
135°	<b>5.07</b>	<b>6.28</b>	<b>7.32</b>	<b>7.96</b>	<b>8.37</b>	<b>8.80</b>	<b>9.70</b>
150°	<b>4.29</b>	<b>5.43</b>	<b>6.44</b>	<b>7.32</b>	<b>7.92</b>	<b>8.32</b>	<b>9.12</b>
Run VMG	<b>3.71</b>	<b>4.71</b>	<b>5.58</b>	<b>6.37</b>	<b>7.03</b>	<b>7.65</b>	<b>8.46</b>
Gybe Angles	<b>144.5°</b>	<b>148.5°</b>	<b>150.0°</b>	<b>153.0°</b>	<b>160.5°</b>	<b>180.0°</b>	<b>180.0°</b>